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ABSTRACT

It was hypothesized that teacher participation in the New Jersey Writing Project (NJWP) would improve student writing performance. Eight NJWP school districts and seven control school districts contributed data on 225 high school student writers. Postwriting sample scores served as the dependent variable, while type of group (NJWP/control), socioeconomic status, sex, and prewriting sample scores were the independent variables. Multiple regression analysis produced significant results, indicating that NJWP training in writing as a process was a potent influence on the development of writing ability. Students of teachers so trained showed significant and important increases in their writing performance. The correlation of coefficients among the independent variables showed that socioeconomic status was a significant predictor of pretest scores but had no effect on posttest scores. Females had significantly higher scores overall, but sex had no effect on postwriting when prewriting effects were controlled. Grade level had no correlation with either pretest or posttest scores. The effect of teacher and type of course produced confounding results, because of the difficulty in separating them for analysis. The data nevertheless suggested that the isolated teaching of basic skills might prove counterproductive, and that writing instruction without the benefit of varying contexts and registers for stimuli might not yield desired results. (RL)

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PROCESS INTO PRODUCT: AWARENESS OF THE COMPOSING PROCESS AFFECTS THE WRITTEN PRODUCT

Joyce Armstrong Carroll

Background

In 1974 the University of California launched the Bay Area Writing Project (BAWP), a school/university cooperative venture to improve the writing preparation of all students. By 1977 the BAWP was sponsoring 13 other writing centers. As one of these centers, the New Jersey Writing Project (NJWP), a consortium of Rutgers University, the Educational Testing Service, and 19 New Jersey project and control school districts, was generally modeled upon but not identical to BAWP. The University of California at Berkeley partially funded NJWP through a National Endowment for the Humanities Grant; other funding was supplied by the State of New Jersey's Compensatory Education Research and Development Grant.

The New Jersey Writing Project began in 1977 with a summer institute conducted by Dr. Janet Emig, Director of NJWP. Volunteering teachers from project schools had been interviewed prior to the institute after district recommendation indicated their interest in writing and in NJWP's goal of improving student writing by improving the teaching of writing. This goal was predicated on the following assumptions: (a) teachers of writing should write; (b) writing is a mode of learning; (c) teachers teaching teachers accomplish efficient curricular change; (d) theory about and assessment of writing enhance classroom practices.

The Emig Model

New Jersey school district administrators, despairing over

dropping SAT scores and declining writing abilities, wanted their teachers trained in writing. The Emig Model offered a workable conceptual framework because it included: (a) the major goal and the four assumptions of NJWP, (b) her theory of the composing process, (c) a bimodal theory of discourse (reflexive/extensive), (d) process into product methodology. Therefore, by coupling district commitment with the Emig Model within the context of the summer institute, a viable training/transference schema resulted (Figure 1).

Insert Figure 1 about here

After the institute, the trained teachers continued by implementing the model in their classrooms and districts.

The Emig Model, then, became at once the basis for the data of this study and the basis of a potential schema for the training of teachers. The juxtaposing of the results of the students' writing samples with the way their teachers were taught to experience the composing process reveals information concerning the relationship of teacher instruction to teacher effectiveness. This research also offers a possible epistemological model for teacher involvement in writing as a process.

The Institute

Consisting of a morning and afternoon session five days a week for three weeks, the institute's basic premise was teachers learn the composing process by composing themselves. Thus, the 25 participating teachers wrote for at least one hour every morning; the significance of the writing activity was conveyed by its placement first on the schedule. Initially, writing was free and self-

sponsored, activated to initiate the process and keep it going (Elbow, 1973; Emig, 1971; Macrorie, 1970). As the institute progressed, other stimuli activated writing: peer suggestions, conferences, presentations, and the assignment of two polished pieces of writing due at institute's end. These teachers grappled with their writing, in some cases for the first time. Some began with poetry and ended with prose. Some started informal, reflexive pieces which evolved into extensive ones. Many kept journals ([redacted], 1972; Parker, 1977; Parker, 1978). In each case the process was unique.

At mutually acceptable times after this daily writing, the participants formed groups and each person read aloud. Group members responded constructively. Everyone was free to share and usually did. No one was coerced; no one was pressured. If a piece of writing would not work, the informal nature and positive attitude of the group encouraged the writer to ask for specific criticism. Then everyone struggled to make meaning.

After sharing, reformulation occurred. It was distinctive, not prescriptive, because while advice was taken into consideration, personal purpose and style arbitrated final decisions. The task of correcting, revising, and rewriting, theorized as separate functions in the composing process, naturally grew out of the continual practice with reflexive and extensive writing, not out of some remote mechanical rules. Yet sound scholarship and evaluation consistently strengthened all this active involvement.

In her article "Writing as a Mode of Learning," Emig (1977) builds upon the work of Vygotsky (1962), Luria (1971), Bruner (1971),

and Révész (1950) in stressing her thesis that writing is unique because it enables immediate "feedback, as well as reinforcement . . . because information from the process is immediately and visibly available as that portion of the product already written" (p. 125). In addition, Stallard (1976) points out that cognitive processes seem to be inherent in the composing process. During the institute this immediacy and cognition fulfilled two purposes: it enabled self-evaluation; it heightened each consciousness to the composing process. So writing became a mode of learning about writing as well as a mode of learning about the teaching of writing. As these realizations developed they, in turn, provided the substructure for the work of the afternoon sessions.

Variety marked the afternoons. Visiting speakers, brief lectures, interactive dialogues, presentations, large and small group discussions alternated with individual conferences. All this revolved around theory, research, and practical experiences.

Participants used Emig's The Composing Processes of Twelfth Graders (1971) which provided theory; Elbow's Writing Without Teachers (1973) which furnished practical suggestions for composing, sharing, and evaluating; W.Ross Winterowd's Contemporary Rhetoric (1975) which added the breadth of recent rhetorical research; and Smith, Goodman, and Meredith's Language and Thinking in School (1976) which presented theory and classroom application. Reprints of selected articles and a bibliography were distributed for further reference.

Implementation

The second stage of NJWP consisted of classroom and district implementation. These trained teachers, now experienced in writing as a process, generally followed the Emig Model in their classrooms. The same ratio of time that had been spent writing during the institute was incorporated as time spent writing in the classroom. Students began keeping journals (Freisinger, 1978; Geuder, 1974). Teachers continued the writing habit by writing when their students wrote (Blake, 1976b; Moore, 1978; Petrosky & Brozick, 1979). Teachers ingeniously integrated writing into their English curriculum (Moffett, 1968; Purves & Rippere, 1968). In every case, there was more writing going on in the classrooms of teachers who had experienced the training. These teachers also allocated time for group sharing and various kinds of peer evaluation. In many cases, students heard and systematically responded to one another's writing for the first time.

Fitting development programs to the needs of district curricula, these teacher/consultants conducted mini-institute workshops, semester-long in-service programs complete with in-school credit, awareness sessions for the English faculty and for the entire faculty. They often visited other project schools. NJWP administrators also participated. In short, there was a consistent inter- and intrasupport system operating among all levels of the consortium. Control schools, while part of the consortium, were not part of the 1977 institute, in-service training, or any phase of staff development in 1977-1978.

Assessment

Stage three involved the development and use of assessment instruments and procedures. Evans Alloway, Director of Programs for the Assessment of Writing at the Educational Testing Service, worked closely with members of NJWP. This phase encompassed the following: (a) teacher and student writing attitude surveys, (b) classroom observation sessions, (c) students' writing samples, (d) the Written English Expression Placement Test developed by ETS for the Comparative Guidance and Placement Program of the College Entrance Examination Board.

The Purpose

The major purpose of the research recorded here focuses on NJWP's goal: improving student writing by improving the teaching of writing. Outcomes of the holistically scored pre- and post-students' writing samples were analyzed to determine: Did the writing of students taught by project teachers who were trained in writing as a process during the summer institute improve over the writing of students taught by control teachers who did not receive training in writing as a process?

The minor purpose focuses on each of the independent variables in relation to the major purpose to determine: What is the effect of socioeconomic status, teacher, grade level, course, and sex upon these groups?

The Significance

Research in the area of teacher training in composition and the subsequent effects of that training on students' writing is slim. The Illinois Statewide Curriculum Study Center in the Prep-

aration of English Teachers (ISCPET) by Hook, Jacobs, and Crisp (1969) and Bragle's (1969) review of the College Entrance Examination Board Summer Institutes were pioneer attempts in ascertaining the extent and kind of preparation teachers received in composition (as well as in language and literature) in order to help bridge the gap between practice and preparation. Recommendations called for more work in the composing process (Hook et al., 1969). However, research illuminates little on teacher experience with process.

Studies such as Tovatt (1965), and Tovatt and Miller (1967) describe the results of the oral-aural-visual (OAV) stimuli approach to the teaching of general skills in English to ninth-graders. While these studies deal with a specific kind of process they reveal nothing about the teacher's experience prior to teaching OAV.

Denman (1978) stresses process by presenting evidence to support her humanistic, noncognitive approach for teaching writing. She offers suggestions for using her approach but she does not deal in any way with teacher training on process.

Blake (1976a) reports the results of attitude changes (using an attitude scale of his own construction) after a five-week summer course on the teaching of writing. There is no account in this report of any transference of the summer course training or of the change in attitudes about writing to subsequent student writing.

In her thorough study on composition instruction, Bamberg (1978) investigates the quality and quantity of composition instruction in high school and its effect on college freshmen (regular and remedial) but again no mention is made of the quality and quantity of compo-

sition instruction of the high school teachers.

Moslemi's study (1975) takes another aspect of composition into account, that of creative writing. She deals directly with high school students as subjects but limits her investigation to a method of evaluation, not a method of teaching process.

Sanders and Littlefield (1975) study the composing process in relation to the significance of testing conditions to the classroom conditions under which the writing had been taught. Their concern is more in terms of validating a test for the composing process than in dealing with the effects of training in process.

The present investigation is significant because it addresses questions heretofore unanswered about teacher training in the writing process. It probes the influence of teacher preparation on the outcomes of their students' writing. It assesses training impact and the transference of writing as a process to students.

Fundamentally, process is internal. Process in writing consists of the writer's inner involvement with the nature of the stimuli (self, others, environment, artifacts) as well as with all that is implicit in putting words on paper. Product in writing connotes outer involvement with what has been written (corecting, revising, rewriting). Yet product is part of process; it is its culmination. The difficulties, ambiguities, and contradictions about both student writing and the teaching of writing occur because little distinction is made between process and product and because usually emphasis is placed upon the measurable product (the written piece).

Teachers, whether habitually or intentionally, frequently re-

main on the periphery of students' writing noting only externals, according to Witkin (1974). In discussing the process of creative expression, he suggests this traditional concern with product may be due to the incomprehensibility of process to the praxis of teachers. He insists involvement is so essential to the setting, making, holding, and resolving of expressive acts that teachers must "enter the creative process at the outset" (p. 169). He reasons the teacher must have a model for conceptualizing the structuring of process in order to accomplish this.

Britton and the members of the University of London Writing Research Unit agree:

> Teachers have many reasons for being interested in writing processes. Their involvement with all the learning processes of their pupils requires that they understand how something came to be written, not just what is written. They can bring to their reading of a pupil's work all their knowledge of his context, realizing, perhaps intuitively, that what they already know about a child and his thinking when they read his work enables them to understand and appreciate something that may be incomprehensible to another. In this respect, many teachers are far in advance of anything educational research has been able to offer them. (1975, p. 21)

Bullock concurs, "If a teacher is to succeed in this he will need to learn all he can about the process involved in writing and above all the satisfactions to be derived from it" (1975, p. 165).

This investigation also provides illumination. Its results can be applied to Witkin's praxis theory, what Britton et al. label as intuitive and Bullock's statement about teacher success.

Review of Literature

Since this study has the writing process as its subject, appropriate recent research was integrated throughout. Its review of

literature, however, treated writing within the larger contexts of language and thought by unifying the various disciplines which deal in some way with these contexts. Therefore, this review freely probed philosophy, anthropology, biology, linguistics, and education. Further, because of the bimodality fundamental to the Emig Model, the internal dualism within each discipline was made explicit: analytic, imaginative; ontogenetic, imitative; left-hemisphere, right-hemisphere; mentalistic, mechanistic; and extensive, reflexive.

The original seventy page exploration into the dichotomies historically constant in language and thought allowed application of this study's findings within a secure historical perspective. The bifurcation pattern found throughout the history of human thinking can be seen in abbreviated form in Table 1. This cross-disciplinary approach clearly placed the study of writing, complete with its dual modes of discourse, within a long and complex tradition.

Insert Table 1 about here

Design

Eight of the 12 project school districts and all seven control school districts involved in NJWP contributed data to this study. One project school district was dropped prior to fall testing, and two others were disqualified because of incomplete testing data. The fourth, because of modular scheduling, tested uniquely and could not be included. The codes for the remaining districts are presented in Table 2. Assigning the Arabic figures protects anonymity; the letter signifies the District Factor Group (DFG).

Insert Table 2 about here

Selection of districts was made to reflect the distribution of demographic characteristics in the state. Project and control districts reflect D, H, F, J demographies. There was a project district E, and control districts representing A and G. Further, there were two H project districts.

The project and control districts obtained prewriting samples in October 1977 and postwriting samples in May 1978. Excepted are project districts 5E, 6F, and 9J. These districts posttested in January 1978. No control district posttested in January 1978. English teachers from these 15 districts taught approximately 1,400 students.

The Subjects

For the purpose of analysis, 15 students from each district were chosen at random from all participating students. This sampling was conducted in order to weight each district's contribution equally. Additionally, since the argument can be made that the district should be the unit of observation, the resultant n of 225 strikes a middle ground between the highly conservative n of 15 (using the district as the unit) and the liberal n of 1,400 (using all students). Fifteen students were chosen as the base number because this number (n=15) represents the smallest number of students with complete scores in a given district. Students from the other districts were then randomly selected. Consideration was given to a balance according to sex. At the time of this study, these students were enrolled in grades 7 through 12 in the English classes of 21 project and control district teachers. Subjects were coded (a)

to indicate district identification, (b) to protect their anonymity.

The Independent Variables

In order to investigate the hypothesis of this study--that teacher awareness of the composing process affects the quality of their students' written products--a quasi-experimental design was used. Since the project and control districts were not randomly assigned, some adjustments were necessary to make the project/control contrast more appropriate. The most critical of the adjustment variables was the prewriting scores (PREWRIT). Additionally, the discrete variables of project or control type group (TG) and sex (S) as well as the continuous variable of socioeconomic status (SES) were used in order to investigate the experimental factor. Type of course (TC), grade level (GL), and teacher (TEACH) were included as independent variables in order to compute the correlation coefficients among these independent variables.

Type Group (TG)

Letters explaining NJWP and inviting membership in the consortium were sent to demographically disparate school districts across the state early in the spring of 1977. Interested districts volunteered and were accepted into the program chronologically and demographically. These districts became the source for the subjects of the project type group, coded 1. There were 120 subjects from TG-1.

Follow-up invitational letters were sent in the fall of 1977 to different school districts. Seven of these districts voluntarily responded and became the source for the subjects of the control type group, coded 0. There were 105 subjects from TG-0.

Sex (S)

The sample was stratified on sex. There were 7 or 8 males and females from each district resulting in a total of 112 females and 113 males randomly selected from the 15 districts. Since project district 9J had only five males and since consideration was given to a balance according to sex, more males were randomly selected from two other project districts to compensate. 10F and 11H were chosen because they were demographically similar and had duplicate project districts. The student sex identification code was 0 female, 1 male.

Type of Course (TC)

Course type includes 25 different English curricular offerings. Table 3 lists these courses and provide a tabularization of the number of enrolled students.

Insert Table 3 about here

Five of these courses deal solely with writing: Effective Writing I, Basic Writing Skills, Creative Writing, Journalism, and Composition. Individual Reading and the Art of Writing combines reading and writing. Thirty-six of the 225 students were enrolled in these six courss at the time of this study, representing 16% of the total number of students. No effort, however, was made to limit testing only to writing courses. Since writing is an inextricable part of any English class, obtaining data from only "pure" writing courses was not considered necessary.

Teacher (TEACH)

Fourteen teachers were from the eight project districts; seven

teachers were from the seven control districts. These teachers were coded 01 through 21 to protect their anonymity.

Socioeconomic Status (SES)

Socioeconomic status is so closely aligned with New Jersey's District Factor Groupings (DFG) that often these two labels are used interchangeably. DFG is determined by factor analysis. The eight variables in the composition of the factor are: (a) educational background, (b) occupational background, (c) per capita income, (d) percent poverty level, (e) unemployment rate, (f) population density, (g) degree of urbanization, (h) population mobility. In New Jersey, the letter "A" signifies the lowest level of socioeconomic status; the letter "J" signifies the highest. School districts designated A, D, E, F, G, H, and J are represented in this study.

Grade Level (GL)

Subjects were enrolled in grades 7 through 12 at the time of this study. Table 4 indicates grade level and frequency.

Insert Table 4 about here

Prewriting Sample (PREWRIT)

The prewriting sample was obtained in October 1977 from all the subjects in this study. This writing sample consisted of a written response to Writing Topic I which is described next.

The Dependent Variable

Postwriting Sample (POSTWRIT)

Between October and May of the 1977-1978 school year, subjects in the project group were taught writing by teachers trained in

NJWP's Summer Institute. The control group subjects were taught writing according to the training, theories, practices, methods, philosophies, and experiences of their teachers. No attempt was made to alter control teachers' usual manner of approaching the teaching of writing. All project and control teachers were requested to pretest in October and posttest in May in order to obtain students' writing samples. The difference between the pretest and posttest writing sample scores allowed for investigation of the experimental factor, sometimes called the intervening variable, which in this case is the affect of training in process on the written product.

The instrument was entitled "WRITING TOPIC I." The nature of this stimulus, field and mode of discourse, involved nonlimiting options. The nature of the conditions for testing, a timed, impromptu piece of writing, provided the limitations (Hogan, 1977). The exact instrument is reproduced below:

WRITING TOPIC I

> Write on this topic for twenty minutes.
> Use the bluebook(s) provided.
>
> Write about an object that is really important to you, something that has become a part of your life. You might want to write about how you discovered it or what it has come to mean to you. You may write a journal entry, a letter, a story, a brief autobiography, an essay, or a poem.

The method of assessing the writing samples was holistic scoring. This type of writing evaluation enables trained readers, in this case trained by Evans Alloway, to rank writing samples quickly, as a whole, according to a predetermined four-point scoring range: 1 (low quality) to 4 (high quality). A scale of this type works because:

> readers are forced away from a middle, or uncommitted score. Readers must first decide whether the paper is above average

> (in the 1-2 category). After making this first decision, readers must then judge whether the paper is enough above average to rate the highest score (4) or enough below average to rate the lowest score (1). (Conlan, 1976, pp. 3-4)

Reliable and valid "holistic scoring techniques have been extensively researched over the past twenty years, particularly by personnel of ETS in connection with essay exercises used in various College Board examinations" (Mellon, 1975, p. 23), and as such help establish comparisons of large numbers of papers written in different time periods.

While Diederich (1974) advised eight or more test essays as necessary for a controlled experiment in order to achieve a reliable score, Cooper (Cooper & Odell, 1977), citing Stalnaker (1934), contends an interrater reliability correlation range of .73 to .98 can be achieved with fewer samples if the raters come from similar backgrounds and have the proper holistic training. Follman and Anderson (1967) and Coffman (1971) support Cooper's contention. Concern over cooperation and time as reliability factors cause Cooper to maintain that "we must have at least two pieces of student's writing, preferably written on different days; and we must have at least two independent ratings of each piece" (p. 19). These considerations were met for this study.

All the writing samples, approximately 2,800, were coded, mixed, and the information page was taped back. From these, random samples were chosen, read and rated by Alloway and a group of four experienced readers in order to establish an accurate representation of the total set of papers for base-line data. "Raters must judge individual essays relative only to the other essays in the group being rated

rather than to outside norms" (Mellon, 1975, p. 23). These representative samples were reproduced for use in the readers' training session. After the training, these readers, identified only by a number, progressed through all the writing samples with occasional breaks for consistency checks and rest periods until each writing sample was read and rated once. Then each writing sample was read and rated a second time by a second and different reader. The scores were checked, then summed. Scores range 2, 3, 4, 5, 6, 7, 8 since not every paper received the same score from both readers. Discrepant papers (those with a difference of two points) were given a third reading by a third and different reader. The pretest and posttest writing sample scores of the subjects in this study were arrived at in this manner.

Procedures

For Subjects

The procedures followed by teachers administering the pretest and posttest "WRITING TOPIC I" were standardized in the sense that all teachers received and used identical directions.

For Data

Two types of analyses were used to obtain information, multiple regression and the correlation of coefficients. The former analysis relates to the major purpose of this study; the latter analysis to the minor purpose. The following formula provided the procedure for the statistical multiple regression computations.

$$\text{POSTWRIT} = \beta_0 + \beta_1 \text{TG} + \beta_2 \text{SES} + \beta_3 \text{S} + \beta_1 \text{PREWRIT}$$

$$n = 225$$

The basic analysis was multiple regression with postwriting sample scores (POSTWRIT) as the dependent variable and type of group (TG), socioeconomic status (SES), sex (S), and prewriting sample scores (PREWRIT) as the independent variables. Multiple regression allowed for investigation of the experimental factor of training in process and its affect on the written product.

The correlation coefficients among the independent variables (SES, TEACH, GL, TC, S) were used to compute the effects, if any, of socioeconomic status, teacher, grade level, course, and sex upon the project and control groups.

Results

The simplest way to look at the data is to examine prepost gain for project and control students. These are presented in Table 5.

Insert Table 5 about here

This, however, is an oversimplification and in this instance slightly overestimates the effect of the intervention. A more sophisticated and justifiable approach is a multiple regression analysis. The results of this analysis are given in Table 6.

Insert Table 6 about here

The project variable regression coefficient was significant at $p \leq .0001$. The statistical significance of the project is clear. Since the project was coded 1 and control 0, the coefficient may be interpreted as the direct additional contribution of being a project student as opposed to a control student. This effect was .67 points

on the holistic scoring scale of 2 to 8. Since the standard deviation of the postwriting sample was 1.43, this represents an effect of 45.5% of the SD of the postwriting sample.

An alternative method of assessing the educational impact of the experimental factor is to compare two students who were average on all independent variables except the project/control dichotomy. The average control student would score 4.633 on the postwriting sample while the average project student would score 5.306, an increase of 14.5%.

It is reasonable to conclude that these results are not only statistically significant but also educationally important. The training in writing as a process based on the Emig Model afforded by NJWP's Summer Institute was a potent influence on the development of writing ability. Students of teachers so trained showed significant and important increases in their writing performance.

Prewriting was entered in the multiple regression in order to control, in part, for differences which may have existed between the two groups. The essence of this inclusion was to reduce bias. Sex is not significantly related to the postwriting test. SES is marginal ($p = .12$) and in an anticipated direction (Loban, 1976; Tucker & Smithers, 1977).

Additionally, the means and standard deviations for SES and GL broken down by project/control type group and sex, as presented in Table 7 show that the project students were slightly younger and from slightly lower socioeconomic conditions than the control students.

Insert Table 7 about here

While not significant statistically, this information adds a dimension to the results of the project students.

The minor purpose of this study was to objectively describe the direction and degree of relationship, if any, among the independent variables. The correlation coefficients among these variables were used to compute the answers to the questions: (a) What is the effect of SES in these groups? (b) What is the effect of the individual teacher overall and within specific courses? (c) What is the effect of course? (d) What is the effect of grade level? (e) What is the effect of sex difference?

Effect of SES

Table 8 indicates that socioeconomic status was a statistically significant predictor of the prewriting test ($p \leq .0001$).

Insert Table 8 about here

The multiple regression computation, however, found that once controlled for prewriting, SES had no effect on postwriting. And even without controlled prewriting, SES had only a marginal effect on postwriting.

Effect of TEACH/TC

The effect of teacher and type of course are confounded; that is, the elements are so mingled they cannot be separated for analysis. Table 9 shows the correlations, but the inextricability of teacher to course and conversely course to teacher defies any useful interpretation of these data in this study.

Insert Table 9 about here

The means for TC, however, yield interesting data (Table 10).

Insert Table 10 about here

Courses 04, 06, 07, 18, and 21 are the five courses dealing solely with writing; 11 deals with reading and writing. In every one of these cases, the mean scores for the POSTWRIT either drop or remain the same as the mean scores for the PREWRIT. The most dramatic drop (from 4.00 to 3.00) occurs in the Basic Writing Skills course (06). These data seem to indicate that the isolated teaching of basic skills might prove counterproductive, and the teaching of writing without the benefit of varying contexts and registers for stimuli might not yield desired results.

Effect of GL

Grade level is not correlated with prewriting scores or postwriting scores. Table 11 indicates this lack of correlation.

Insert Table 11 about here

Extracting the GL prewriting test and postwriting test means for the project schools, however, illustrates patterns of growth and improvement rates. The two-point quantum jump (from 2.80 to 4.80) for eighth graders, the .91 increase for ninth graders, and the .55 increase for twelfth graders seem to support other peak grade findings (Loban, 1976). Table 12 shows the means for each grade level.

Insert Table 12 about here

Effect of S

Consistent with a tradition of previous research (Applebee, 1977; Baker, 1954; Martin, 1972; Pianko, 1977; Sawkins, 1971; Stalnaker, 1941), females participating in this study received higher scores than did the participating males (Table 13).

Insert Table 13 about here

However, like SES, when controlled for prewriting, S had no effect on postwriting. And even without controlled prewriting, S had only a marginal effect on postwriting.

It is interesting to note that the PREWRIT mean scores of both the control and project females show evidence of difference at the .44 and .50 level respectively from males in those groups. For the POSTWRIT, control females maintained their lead over males but the difference is considerably less at .12. Project females continued to surpass their male counterparts by .57 (Table 14).

Insert Table 14 about here

Reliability Coefficient

The reliability coefficient of this study was an interrater reliability of .72. This is regarded by researchers as a high accuracy indicator (Hillway, 1969).

Implications and Avenues for Future Research

Implications for future teachers, future students, and future researchers invite an integrated examination of the Emig Model with-

in NJWP. Since the Project provided the setting for teacher training in process, and since the writing of these teachers' students showed statistically significant improvement over the writing of students whose teachers did not receive the training, interest lies in both the training and its transference. Therefore, my approach (a) patterns this process, (b) integrates relevant research, (c) presents tangentially related implications and avenues for future research.

Teachers of writing should write (Emig, 1971; Larson, 1978; Parker, 1978) and teachers should experiment with the reflexive and extensive modes of discourse. They should write in various genres, create pieces of different lengths, for different purposes, and with different audiences in mind (Britton et al., 1975). Teachers should keep journals and record their individual responses to the dimensions of the composing process: context (Parker & Meskin, 1976), stimuli (Ewing, 1967), prewriting (Murray, 1978b; Odell, 1974; Rohman, 1965; Sawyer, 1978), planning (Mischel, 1974), starting, stopping, contemplating (Rohman, 1972), reformulating (Blake, 1976b; Hovelsrud, 1969; Murray, 1978a; Odell & Cohick, 1975).

In presenting suggestions which will help teachers develop necessary strengths as teachers of writing, Richard Larson is explicit:

> writing (writing in varied forms: journals, narratives of personal experience, editorials, news stories, poetry, pieces of dialogue; using their own voices and assumed voices; addressing different audiences) . . . doing, themselves, the activities they expect students to perform . . . and analyzing at some point the processes they pass through in doing these things. (1978, p. 79)

This study reinforces Larson's suggestions by indicating that when

teachers experience process, they broaden their praxes (Witkin, 1974). This knowledge enables them to interact meaningfully with their students, especially at crucial points within the writing process itself. Conversely, perhaps, they do not interfere at crucial times. In his survey of the 1977 NCTE achievement award winners in writing, Applebee observes that their "teachers found ways to get involved during the writing process" (1978, p. 341). He suggests class size affects the teacher's opportunity to sponsor this type of interaction. This study suggests training in process as a factor. Further investigation of these two suggestions would prove enlightening.

Continued research is needed into all the dimensions of the composing process. To my knowledge, except for Goldman-Eisler's work in hesitation phenomena (1968, 1972), little has been done on the starting and stopping stages, for example. Perhaps work on these two dimensions with EEGs and computer hook-ups would yield illuminating data heretofore unobtainable.

If training in process results in better student writing, more colleges and universities should offer courses, experiences, and programs in composing. The surprising lack of training in the teaching of writing compounds problems on the elementary and secondary levels (Graves, 1978).

Cooperative college/university and school district in-service training for teachers teaching composition is required. The London Schools Council's development project, proposed as early as 1966 and approved in 1971, was a corroborative experience (Britton et al., 1975). That project, as well as the one upon which the present study

is based, proves that a multileveled, participative venture is both practical and possible. Discussing teacher training in general, Robert N. Bush, Director of the Center for Educational Research at Stanford, supports such collaboration. "Beginners, experienced school teachers, researchers and developers, all working together in a problem-solving mode in a school setting proved an exciting environment for training" (1977, p. 7).

Another neglected area of research is on-site in-service training with teachers having a greater amount of content control. General professional development training and retraining for existing teachers requires more consideration by administrators and school boards. The potentiality for establishing teachers' centers within existing school districts, given the reality of declining enrollments and the accompanying availability of space, offers possibilities for research in this type of teacher training setting.

Students should write more often (Calkins, 1978b). Since research indicates that writing frequency and writing aptitude have been declining (Bond, 1969; Brown, 1963; Graves, 1978; McCrory, 1972; Peterson, 1969; Squire & Applebee, 1968) the implications for increased teacher/student writing seems clear. Increased frequency encourages practice in all dimensions of the composing process (Emig, 1971; Graves, 1975; Mischel, 1974). This practice, in turn, often leads to improvement of the written product (Stallard, 1974). While the results of the present study cannot be attributed solely to increased frequency, the data suggest (a) writing may be a mode of learning about writing (Bullock, 1975; Emig, 1977; Parker, 1978);

and (b) writing rather than speech may be a sharper shaper of experience, that is, writing is more deliberate, more demanding, more complete than speech. It allows for work, rework, and sharpening (Britton, 1970; Dixon, 1967; Vygotsky, 1962).

In his report to the Ford Foundation, Graves noted that students rarely see adults writing. Hence, students have few adult writing models. He encourages research on "how adult models affect children's writing" (1978, p. 16). The results of this study cause me to echo his call.

Teachers should shift from the traditional teacher-centered audience to a situation providing a range of audiences (Britton et al., 1975). To that end, teachers should:

1. Experiment with developing effective classroom groups (Stanford, 1977).

2. Consider reducing the amount of time spent writing comments on students' papers since at least one study suggests that the number of comments produces little effect (Clarke, 1969).

3. Expand peer evaluation so that more teacher time can be spent on other aspects of the composing process (Pierson, 1967).

4. Regard students as capable of helping one another with the skills of good writing (Calkins, 1978a).

5. Provide immediate feedback on writing either by on-going peer evaluation (Ellman, 1975) or by honest and positive teacher evaluation (Stoen, 1976).

6. Develop criteria sheets appropriate for the reflexive mode and the extensive mode (Kantor, 1975).

7. Use interesting exercises that heighten students' self-awareness of weak areas in their writing (Sloan, 1977).

8. Incorporate conferences into the classroom (Fassler, 1978; Graves, 1978; McCallister, 1970).

Although no one aspect of the teacher training can be isolated to account for the statistical significance of the findings, the results seem to support Bullock's assertion:

> It has not been established by research that systematic attention to skill and technique has no beneficial effect on the handling of language. What has been shown is that the teaching of traditional analytic grammar does not appear to improve performance in writing. This is not to suggest that there is no place for any kind of exercises at any time and in any form. It may well be that a teacher will find this a valuable means of helping an individual child reinforce something he has learned. What is questionable is the practice of setting exercises for the whole class, irrespective of need, and assuming that this will improve every pupil's ability to handle English. What is open to question is the nature of some of these exercises, where pupils are asked to fill in the blanks in sentences, convert masculine into feminine forms and singular into plural, insert collective nouns and give lists of opposites. . . . Most give the child no useful insight into language and many actually mislead him. (1975, p. 171)

It seems obvious that teachers must reevaluate their approach to the teaching of writing. Fragmented drill work on portions of the written product must be replaced by instruction about writing during the writing process itself. More research is needed, too, on the relationship of grammar and composition (Fraser & Hodson, 1978; Newkirk, 1978).

The following summary statements present additional implications resulting from this study.

It is necessary to merge theory and practice when training teachers in writing as process (Applegate & Newman, 1978; Donlan, 1974).

It is important to investigate your own composing process (Mandel, 1978).

More studies of males and females of different ages and different socioeconomic backgrounds are needed to investigate the relationship of language-learning to stages of cognitive development (Graves, 1975).

Researchers should explore the relationship between left hemisphere, right hemisphere "knowing" and reflexive, extensive modes of discourse. The teaching of writing must be brain balanced. It must take into consideration the multiplicity of processes and dimensions possible because of each hemisphere's unique activity (Hart, 1978; G. Nelson, 1976; Samples, 1975).

Teachers should be apprised of the most propitious levels for growth and development in composing and should work on specific syntactic structures at these levels (O'Donnell, 1976; O'Donnell & Smith, 1975).

There should be continued study into the relationship of sound to writing (talk/write) and a guide for students' understanding of their writing processes (Cooper & Odell, 1976).

Teachers should make videotapes of students' writing. This would provide accessible material for discussion of process with students (Birnbaum, dissertation in progress; Cooper & Matsuhash,1977).

Investigations in language acquisition must continue (Dennis & Whitaker, 1976; Wexler, 1978).

Empirical research is needed in language-learning areas which have been dominated by speculation (Deese, 1978).

Writing programs based on sound research should be developed for all levels of instruction (Taylor, in press).

Courses should be designed to complement the process approach to writing (Draper, 1969).

Research on the possible interconnections between the reflexive and extensive modes and the movement between these modes would be valuable (Waitkus & Meskin, dissertation in progress).

Professional writers (Faulkner, Updike, Didion) often attribute a piece of writing to a specific image. Mental imagery and its relationship to the writing process is still relatively uncharted research territory (Shepard, 1978). Continual probing into visual thinking and its relation to writing seems particularly relevant especially since Lloyd-Jones and Winterowd suggest in their NAEP report that students may be assimilating visual techniques from television into their writing (Mellon, 1976).

Attempts should be made to create a research design which would record interconnections, if any, between Vygotsky's "crucial instant" and Emig's "starting dimension."

In conclusion, this study suggests new challenges. Simply stated, education compatible with process paradigms produces results. Also, this investigation provides teachers and students with new direction and support. They must jointly take the responsibility for learning because it <u>is</u> a dynamic, highly individual, unique, yet participatory venture.

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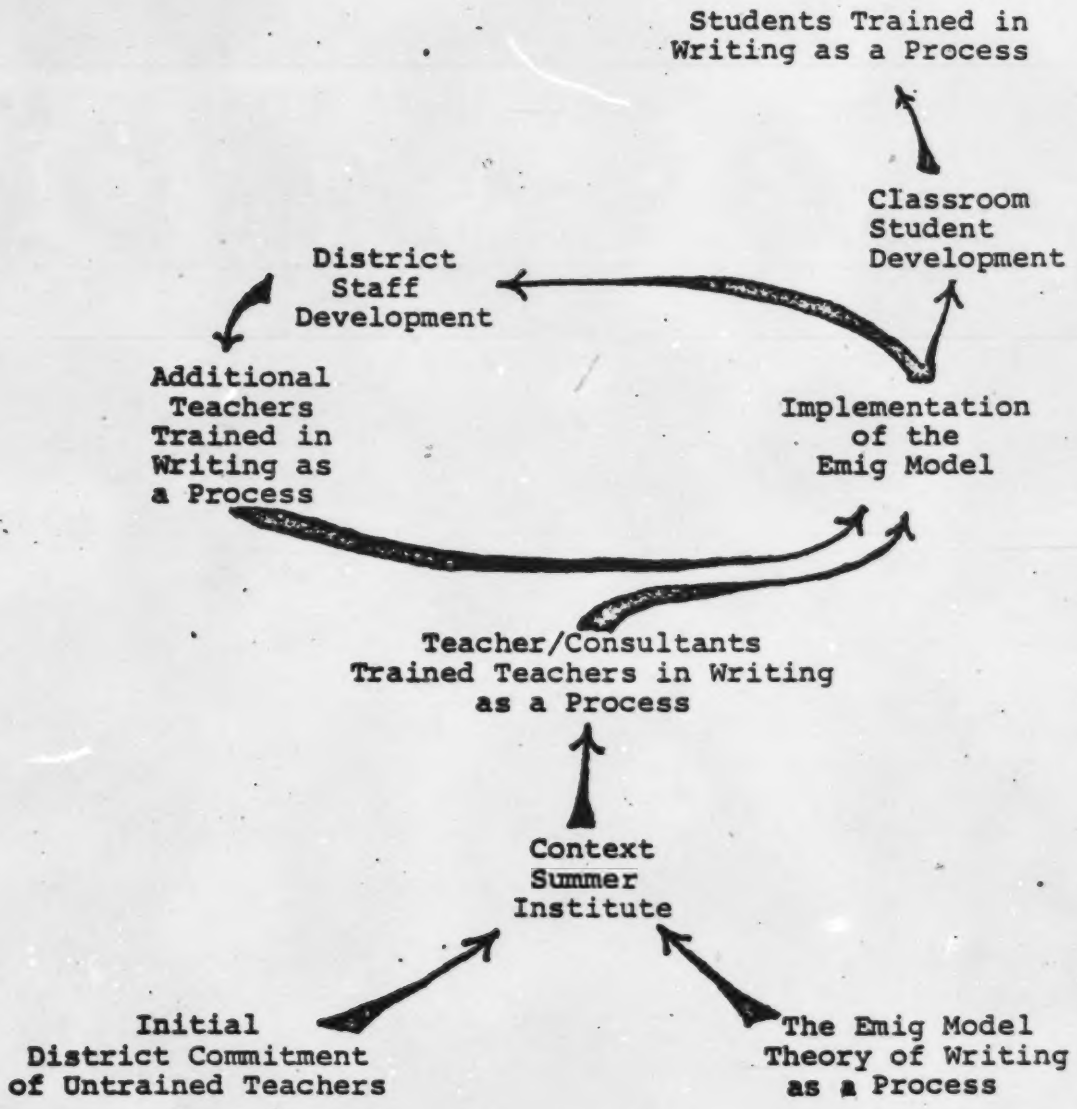
Students Trained in Writing as a Process
Classroom Student Development
District Staff Development
Additional Teachers Trained in Writing as a Process
Implementation of the Emig Model
Teacher/Consultants Trained Teachers in Writing as a Process
Context Summer Institute
Initial District Commitment of Untrained Teachers
The Emig Model Theory of Writing as a Process

Figure 1. Training/transference schema.

TABLE 1

CROSS-DISCIPLINARY DICHOTOMIES

Suggested by	Dichotomies	
Plato	form	ideas
Aristotle	body	soul
Abelard	particular objects	universal concepts
Aquinas	reason	faith
Pomponazzi	objective truth	religious truth
Francis Bacon	mind	instincts/emotions
Descartes	matter	spirit
Hume	experience of ideas	experiences of impressions
Kant	reason	judgment
Cassirer	theoretical	mythical
Langer	discursive	presentational
Polanyi	explicit	tacit
Révész/Sapir	imitative	ontogenetic
Hippocrates	reason	sensation
Tiger	science	fancy
Jaynes	language of men	language of gods
Ornstein	left hemisphere	right hemisphere
Dickman	action mode	receptive mode
Gazzaniga	verbal	visuospatial
Bogen	propositional	appositional
I Ching	Ch'ien	K'un
Lee	lineal code	nonlineal code
Domhoff	"right is good"	"left is bad"
de Saussure	speaking	language synchrony diachrony
Bloomfield	mechanistic	mentalistic
Ogden & Richards	symbolic	emotive
Chomsky	performance	competence
Piaget	organization	adaptation
Bruner	analytic	intuitive
Vygotsky	speech	thought
Dewey	other ways of thinking	reflective thinking
Britton	transactional	poetic
Emig	extensive	reflexive

TABLE 2

DISTRICT FACTOR GROUP OF NJWP

Project School Districts	Control School Districts
	17A
4D	15D
5E	
6F	16F
10F	
	18G
3H	12H
11H	
7J	13J
9J	14J

TABLE 3

COURSES AND ENROLLMENT

Code	Course Identification	Enrollment
01	Freshman English	59
02	Advanced Freshman English	12
03	European Literature	10
04	Effective Writing I	6
05	Satire and Search for Utopia	1
06	Basic Writing Skills	3
07	Creative Writing	7
08	American Search for Identity	5
09	Sophomore English L. A. II	22
10	Practical English I	5
11	Individual Reading and Art of Writing	4
12	Advanced Placement English	5
13	Poetry	5
14	English IV	27
15	English III	2
16	Eighth-Grade English	5
17	Seventh-Grade English	5
18	Journalism	10
19	The Supernatural	2
20	Literature of the Minorities	4
21	Composition	6

(continued)

TABLE 3--Continued

Code	Course Identification	Enrollment
22	Literature of the Occult	3
23	Mythology	1
24	Dramatics	1
25	English 4 (Career Business)	15

TABLE 4

GRADE LEVEL AND FREQUENCY

Code	Grade Level	Frequency
0	Seventh	5
5	Eighth	5
1	Ninth	73
2	Tenth	22
3	Eleventh	34
4	Twelfth	86

TABLE 5

PRE- AND POSTWRITING SAMPLE SCORES

	Pre	Post	Difference
Control x	4.89	4.69	-.20
(n = 105) SD	1.45	1.29	
Treatment x	4.64	5.24	+.60
(n = 120) SD	1.65	1.49	

TABLE 6

REGRESSION ANALYSIS OF WRITING SCORES

Analysis of Variance						
Source	df	SS	MS	F	p Value	R^2
Regression	5	202.34	40.47	35.08	$\leq$ .0001	.44
Residual	219	252.6	1.15			
Total (corrected)	224	454.96				

Coefficients				
Parameter	Regression Coefficient	t	p Value	Standard Error of Coefficient
PREWRIT	+ .396	6.67	$\leq$ .0001	.059
Sex	-0.068	-0.47	.6401	.145
SES	-0.059	-1.57	.1182	.038
TG	+0.674	4.66	$\leq$ .0001	.145
INTERCEPT	+1.499	4.55	$\leq$ .0001	.329

TABLE 7

MEAN SES AND GRADE BY SES AND GROUP TYPE

Type of Group	Sex	Grade Level $\left(\frac{\bar{X}}{SD}\right)$	SES $\left(\frac{\bar{X}}{SD}\right)$	n
Control	Male	10.80 (1.31)	4.54 (2.44)	52
	Female	10.71 (1.32)	2.44 (2.39)	53
Project	Male	10.54 (1.39)	4.28 (1.57)	60
	Female	10.43 (1.51)	4.00 (1.52)	60
Total		10.61 (1.39)	4.33 (1.99)	

TABLE 8

CORRELATION COEFFICIENTS

	SES
PREWRIT	0.2984
Significance	0.0001
POSTWRIT	0.1069
Significance	0.1099

TABLE 9

CORRELATION COEFFICIENTS

	TEACH	TC
PREWRIT	-0.0524	-0.0146
Significance	0.4344	0.8278
POSTWRIT	-0.0910	-0.2181
Significance	0.1738	0.0010

TABLE 10

TYPE COURSE MEAN SCORES

TC	PREWRIT POSTWRIT	TC	PREWRIT POSTWRIT	TC	PREWRIT POSTWRIT
01	4.60 5.03	09	5.04 4.40	17	2.80 4.80
02	4.75 5.75	10	3.20 4.00	18	5.80 4.90
03	5.80 5.50	11	4.25 4.25	19	6.00 6.00
04	5.33 5.33	12	6.80 6.60	20	4.25 4.00
05	6.00 7.00	13	6.00 6.50	21	5.00 5.00
06	4.00 3.00	14	4.81 5.22	22	4.00 4.00
07	5.14 5.00	15	3.50 4.00	23	8.00 4.00
08	4.20 5.60	16	3.20 3.40	24	6.00 6.00
				25	3.93 4.80

TABLE 11

CORRELATION COEFFICIENTS GRADE LEVEL

PREWRIT	0.0735
Significance	0.2721
POSTWRIT	0.0854
Significance	0.2018

TABLE 12

PROJECT SCHOOL MEAN SCORES BY GRADE LEVEL

GL	Mean
7	3.20
	3.40
8	2.80
	4.80
9	4.84
	5.75
10	4.80
	5.00
11	4.73
	4.76
12	4.75
	5.30

TABLE 13

CORRELATION COEFFICIENTS SEX

PREWRIT	-0.1517
Significance	0.0228
POSTWRIT	-0.1282
Significance	0.0549

TABLE 14

SEX MEAN SCORES

		Female	Male
Control	PREWRIT	5.11	4.67
	POSTWRIT	4.75	4.63
Project	PREWRIT	4.88	4.38
	POSTWRIT	5.52	4.95